

*catus*. Harris in his catalogue (second edition 1835) has first mentioned Say's species and in his manuscript catalogue records receiving the same from "Doct. Gould, another from Dr. Smith." This entry is inserted between specimens collected in May and June, 1831. Prof. Riley in his third Missouri report (1871 p. 11) states that the species infests the crown of strawberries but does not say where it was observed. Provancher speaks of the species as "très commune." Lintner in his second report (1885 p. 51) mentions it as injurious to bulbs and house-plants. I do not find the species recorded west of Pa. In the European literature it is mentioned everywhere and the early stages are described by Bouché, Westwood, Lucas and others. H. A. Hagen.

NOTES ON COLIAS EURYTHEME AND C. PHILODICE.—In the vicinity of Charleston, S. C., where most of my observations have been made, *Colias eurytheme* is the characteristic type. I may say, in fact, that it is the only member of the genus that I have ever seen on the seaboard. It is as plentiful there as *C. philodice* usually is in its proper range, though not seen, as far as I know, in the countless hordes in which the latter is said to congregate at times. In Clarendon County, S. C., where I have collected, off and on, for a good many years, *C. eurytheme* was not as abundant as on the coast, *C. philodice* not found at all, and *C. caesonia* taken occasionally. In Ashville, N. C., where *C. philodice* is very abundant, I have never seen *C. eurytheme*; and *C. caesonia* but once. Spartanburg County, S. C., is the highest locality in which I have yet found *C. eurytheme*.

I have never seen *C. philodice* at all in South Carolina until this autumn; at which time I was enabled to do considerable collecting in Columbia, a locality where I had never collected before. Here I found *C. philodice* and *C. eurytheme* occurring in equal and considerable abundance, and this spring

I meet *C. philodice* and *C. ariadne* in about the same proportion. I have noticed a decided difference of manner between the two; *C. eurytheme* being much swifter in flight, its stop at a flower less prolonged, and its whole manner more decided; and it is also much more wavy and therefore more difficult to catch than *C. philodice*. In this respect, my experience is, to use an equation, that *C. philodice*: *C. eurytheme* :: *C. eurytheme*: *C. caesonia*.

Our normal spring form of *eurytheme* is *C. ariadne*. I have taken, this past January (12th to 24th et seq.) a large series of *C. ariadne*, which are, on the average, identical with forms from Texas, and show no marked variation from a few that I have from Wisconsin. A pretty full series of western *C. eurytheme* in my collection, consisting of specimens from five states, from Wisconsin to California, present no marked difference from our autumn *eurytheme*; possibly in one or two cases, the western form may be a trifle more iridescent than our average; but I have one July ♂ taken in Charleston, that is fully as rich in color, as any that I possess from the west. I notice among these western forms some that appear to me to be unmistakably *C. keewaydin*: this form I have not taken here, though I have a few *C. ariadne* from Charleston that are very large and yellow and seem to intergrade with *C. keewaydin*.

The autumn ♂♂ of *C. philodice* taken in Columbia are much larger than northern forms of the same in my collection from Princeton, N. J. We have a spring form of *C. philodice*, bearing the same relation as far as size is concerned, to the autumn *C. philodice*, that *C. ariadne* bears to *C. eurytheme*.

In the city of Charleston, I have taken the eggs of *C. eurytheme* from white clover, as they were laid by the female.

The white ♀♀ of both *C. eurytheme* and *philodice* I have taken here, in Columbia, in spring and autumn.

*C. caesonia*, the only other of the genus found with us, is by no means abundant, though not infrequent last autumn. I captured six in Columbia, in October and November, 1889. Elison A. Smyth. Jr.